

Sense-Making of The Implementation of an Enterprise Resource Planning Software Solution

Christianah O. Ojikutu^{1*} Olufunke Meadows² Ibukunoluwa A. Omokanye³

1. School of Business, Westcliff University, Irvine, CA 92614, USA
2. School of Business, Westcliff University, Irvine, CA 92614, USA
3. School of Business, Westcliff University, Irvine, CA 92614, USA

* E-mail of the corresponding author: c.ojikutu.481@westcliff.edu

Abstract

In a bid to increase their efficiency and productivity, organizations conducting their business processes manually or semi-automatically realize their need to migrate to a more effective, automated system of managing their operations. Organizations may opt to adopt an Enterprise Resource Planning (ERP) system to achieve this purpose. As is common with organizational change, ERP implementation in organizations can be met with resistance from organizational stakeholders such as employees. Organization need to overcome this resistance and support stakeholders to understand and embrace the change. This article therefore explores how a company might effectively navigate the change—the implementation of an Enterprise Resource Planning (ERP) system—from an organizational sense-making perspective. It also delves into various aspects of the ERP, such as its meaning, benefits, and factors that can lead to a successful or failed implementation. Additionally, this paper identifies the implementation and adoption of an ERP as a change management process requiring the steering of a change manager. Hence, information is provided on the role of a change manager, who in the change management process, acts as an interpreter by making sense to the change, in order to facilitate a successful implementation of the ERP solution. This paper provides an exposé into the utilizing of the sense-making framework as a way to navigate ERP implementation, with the aim of positively effecting the change.

Key Words: Enterprise resource planning (ERP), ERP implementation, organizational sense-making, organizational change management, change manager

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1. Introduction

Many organizations have depended on legacy systems to execute their business processes (Pratt, 2023). According to Crotty & Horrocks (2017), a legacy system is defined as a system that is crucial to business needs but has certain features that make it sub-optimal. These features include archaicness of the system, obsolescence of the computer language, poor data management, incomplete data, high maintenance costs, poor support available, etc.

Due to the need for a more effective and efficient system, companies have identified the need to adopt a better software solution (Gartner, 2019). In their operations, some organizations may have been fully manual, semi-automated, or hybrid—incorporating manual, paper-based processes and the digitization of some tasks and processes (SAP, n.d.). The effect is that their diverse business processes and functions would be disjointed and siloed, leading to inefficient business operations and reduced performance.

In a bid to overcome this challenge, companies have recognized a need to migrate from such systems of operations to a more effective solution. Organizational leadership may decide to adopt the use of an Enterprise Resource Planning (ERP) solution that would help to integrate its data and processes, while affording it the opportunity to run its activities in real-time (Yakovlev and Anderson, 2001). This new development would be received by the employees with a range of emotions or reactions, which may be positive, negative, or indifferent. While some employees would react with joy and excitement at the prospect of upgrading the organization's business processes,

some would receive the information with negativity and resistance (Cohen, 2010). Resistance may arise for many reasons, such as a lack of trust in management, the anxiety of having to learn and adopt a new way of working, the fear of inability to acclimatize to the new system, a lack of information or understanding, and the fear of uncertainty. (Palmer et al, 2021).

Indifference is another possible response to the new development, and this can be termed organizational indifference. Organizational indifference is a situation in which an employee is unconcerned about the failure or success of their organization (Kramer, 2006; as cited by Mehrabann, 2021; Malekzadeh and Golmohammad, 2018; Nasabi and Bastani, 2018). An employee may exhibit indifference for various reasons, such as low engagement, low job control, poor quality of work, attitudes and beliefs, injustice or a lack of meritocracy, poor employee communications, and a lack of employee involvement in decisions (Ahmadi and Fattahi, 2016; Meimand et al., 2012; Nasabi and Bastani, 2018).

For the successful implementation of an ERP system, there must be a buy-in of the various stakeholders involved in the project, such as the project sponsor, departmental heads, employees and end users of the tool and project teams (Fiduciasoft, 2021). It is also important that the stakeholders are in alignment with the project objectives. The concept of sense-making can be employed by management as a strategy to facilitate the buy-in and engagement of employees in the ERP system for a successful implementation.

2. What is an ERP?

Enterprise resource planning (ERP) is “defined as an integrated and cross-functional system that helps in managing all operations of a company” (Al-Mashari, 2002 and Singh et al., 2013; as cited by Kiran and Reddy, 2019). An ERP software is also defined by Oracle (n.d.), a software company, as: a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. A complete ERP suite also includes enterprise performance management, software that helps plan, budget, predict, and report on an organization’s financial results.

Each set of business functions or activities exists on the ERP as modules, such as finance, human resources, sales, and manufacturing modules (Egbon, 2020; Mikkola, 2013; Tezeny, 2013). An ERP can be deployed as an on-premise software (hosted locally on the organization’s server), a cloud-based software (hosted on a third-party ERP vendor’s server), or a hybrid system (comprising elements of on-premise and cloud solutions) (Al Hayek et al., 2020; Beaver, 2023; Egbon, et al., 2020; Fisher, 2022; Wailgum, 2017). Examples of ERP systems include Oracle, MS Dynamics, SAP, f PeopleSoft, etc. (Gärtner & Kuttner, 2016; Nagpal et al., 2015; Tezeny, 2013).

An ERP is important as it enables an organization to integrate its business processes for better communication of information between the various business functions and departments. ERPs enable access to information and the processing of business activities from diverse locations around the world and across multiple device types, such as computers, mobile phones, and tablets, thereby giving rise to the real-time processing of organizational activities and transactions (Beaver, 2023; Chatzoglou et al., 2016; Kumar, 2018; Tezeny, 2013). Another important aspect of the ERP is that it serves as a central repository of business data, thereby giving rise to a data pool for the entire organization and eliminating data duplication and consequently increasing data integrity (Kumar and Van Hillegersberg, 2000; as cited by Tan et al., 2020).

3. Why Implement an ERP Solution

The essence of the ERP is to provide seamless processing of all an organization’s transactions by allowing the seamless flow of data between the various functions and processes (Egbon, 2020). This software therefore eliminates data duplication and increases data integrity as there is a single, central data warehouse from which all organizational processes pull data (Kumar, 2018; Oracle, n.d.; Tenhiälä and Helkiö, P. (2014; Tezeny, 2013). These result in various benefits that are unavailable via the organization’s current business process execution or through a legacy system. Some of the benefits are access to centralized, single-source data, prevention of data duplication, increased data integrity, real-time processing of business transactions, better decision-making, reduction of error,

ability to process business transactions across various business functions and units and across different devices and geographical locations, increased operational efficiency, increased organizational performance and competitiveness, etc. (Chatzoglou et al., 2016; Egbon, 2020; Haddara et al., 2015; as cited by Egbon, 2020; Kumar, 2018; Munthe, 2022; Ploder et al., 2021; Tan et al., 2020).

4. Factors that Affect ERP Implementation

While the use of an ERP system promises much, there have been various situations where ERP implementation failed, as the implementation of an ERP is not an easy feat (Bintoro et al., 2015; Garg and Garg, 2013; Sheldon, 2005). Factors that may lead to failed or poor implementation of the ERP system include an ERP system misfit, low top management involvement, commitment or support, poor interaction of key actors in the implementation process, poor involvement of users and other stakeholders, resistance from users, inadequate consultant support, inadequate training, poor project management, poor change management, excessive customization – leading to future upgrade failure, poor data quality and limited resources. (Bintoro et al., 2015; Egbon et al., 2020; Garg and Gar, 2013; Hustad and Olsen, 2014; Kiran and Reddy, 2019; Wailgum, 2017).

Conversely, several factors can contribute to the successful implementation of ERP solutions. These factors include top management support and commitment, effective organizational change management, a good project management and implementation team, a suitable ERP implementation strategy, business process re-engineering (BPR), minimized ERP customization, clear communication and understanding of organizational goals, adequate training and involvement of end users, appropriate IT infrastructure, appropriate ERP package and vendor selection, appropriate ERP consultant selection for effective support, right organizational culture - that supports change and the achievement of common goals, etc. (Ali and Miller, 2017; Chatzoglou et al., 2016; Kiran and Reddy, 2019; Nagpal et al., 2015; Schniederjans and Yadav, 2013; Sheldon, 2005; Umble et al., 2003; as cited by Mikkola, 2013). Additionally, a good project management tool would help the project team to plan, track and manage the ERP project to help achieve the defined goals and objectives, while working within the time frame specified. For the project management team, the steps to consider include identifying goals and challenges, considering the features needed in the tool, and firmly determining performance metrics for success.

Among the success factors for ERP implementation, change management is a critical success factor (CSF) (Altamony et al., 2016; Kiran and Reddy, 2019; Beheshti, 2014). Having identified the possibility of a failed ERP software implementation and the necessity of effective change management for a successful implementation, it becomes expedient to explore the role of a change manager—the person responsible for change management—in the implementation process.

5. The Change Manager as an Interpreter

While the value of successfully adopting an ERP is enormous, it represents a transformational change from the company's current ways of operations (Kumar, 2018). For transformational change to succeed, there is a need for strong leadership to manage the change process (Goodman & Dingli, 2017). Consequently, adopting an ERP requires the skills of a change manager which would be portrayed in his change-instigating roles such as director, navigator, coach, and interpreter. As an interpreter, the change manager would provide a narrative that helps the change make sense (Palmer et al., 2021).

6. Organizational Sense-Making

Sense-making can be defined as the “discursive process of constructing and interpreting the social world” (Gephart, 1993; as cited by Maitlis & Christianson, 2014, p. 66). According to Weick (1995; as cited by Carrington and Tayles, 2011, p. 286), it is “a process of making sense and assigning meaning to events in the environment, by applying stored knowledge, experience, values and beliefs to new situations in an effort to understand them.” Applying this definition to organizations, organizational sense-making therefore is a means by which the managers in an organization make use of social constructions in their effort to interpret and make sense of organizational

change (Rouleau and Balogun, 2019; as cited by Palmer et al., 2021; Weick, 1995, as cited by Carrington and Tayles, 2011). Having identified earlier that the implementation of an ERP is an organizational transformational change, sense-making becomes a way to understand and give meaning to the ERP implementation process. According to Weick (1993; as cited by Tan et al., 2020), organizational sense-making is especially important in situations where mutual cooperation and team effort is required from stakeholders. Since the implementation of an ERP requires the cooperation and collective effort of relevant stakeholders, sense-making is therefore necessary for its successful implementation. Sense-making comprises sense-breaking (why we need to abandon the status quo) and sense-giving (why we need to adopt a new way) which give meaning to why the company needs to move away from its current state to the envisioned and desired future state, which in this case is one involving the use of new technology with multiple benefits. The change manager would create awareness of the old system's deficiencies and the myriad of possibilities available with the new system, which include but are not limited to increased data analytics, data integrity, data security, collaboration, and efficiency (Oracle,n.d.).

The change manager needs to weave a story for change, while fully being aware of the possibility of the existence of various counteracting stories that may confront the involved stakeholders. The change manager should also seek to address the fears and concerns associated with the change to an ERP. The implication of sense-making, therefore, is that it provides an avenue to influence the attitudes and behaviours of the stakeholders/employees involved in the change process (Basford & Schaninger, 2016; as cited by Palmer et al., 2021; Palmer et al., 2021) to reduce resistance and increase understanding and acceptance of the new software solution (Kemp and Low, 2008; as cited by Altamony et al, 2016).

6.1 Sense-Making Aspects

For an effective sense-making approach to organizational change, the change manager would benefit from exploring the various aspects of the sense-making framework (Weick, 2000; as cited by Palmer et al., 2021) as follows:

6.1.1 Sense-Making and Identity Construction

Organizations and the individuals in them have preset identities tied to their current ways of operations. It is necessary to reconstruct these identities to fit the new identity of the desired future (Helms M., 2003; as cited by Palmer et al., 2021). The manager can accomplish this by envisioning how the ERP would enable and support the desired future state of the organization, such as a future state of data integration, customer-centricity, accountability, and being a world-class organization.

6.1.2 Social Sense-Making

Change managers should recognize that humans are social beings and should seek to influence sense-making in the organization as a whole (Helms M., 2003; as cited by Palmer et al., 2021). This sense-making endeavor can be achieved by proactive communication (Nguyen & Doan, 2020), responsiveness to enquiries, provision of feedback, etc. with respect to the ERP change plan. It is also important to take advantage of the influence that social frameworks or networks, such as team leaders, supervisors, and trade unions have on the people involved in the change (Cross et al., 2005; Helms, 2003; as cited by Palmer et al., 2021). These efforts at sense-making increase the likelihood of achieving organizational outcomes.

6.1.3 Extracted Cues of Sense-Making

Extracted cues of sense-making involve making inferences with respect to various happenings around the change. Some of these happenings may even be external to the organization. A change manager should be aware of this likelihood and seek to create a better narrative than others (Palmer et. al, 2021). For example, employees may infer from observations within and outside the organizations that a more efficient business process system would lead to redundancy and a loss of job for them. Management should reassure clarify issues and assuage employee's

doubts (Kiran and Reddy, 2019). Continuous communication is an important part of the ERP implementation process (Kiran and Reddy, 2019) to continue to steer and influence employees and other stakeholders in a positive way.

6.1.4 Ongoing Sense-Making

Sense-making is an ongoing process that happens as change progresses and as activities and events unfold. Throughout the process of introducing the idea of an ERP and implementing it, interpretations of the changes will occur and the change manager needs to continue to hold sway and seek to manage impressions (Palmer et. al, 2021). Communication remains a key factor in the process of implementing an ERP (Kiran and Reddy, 2019) and for the continued steering of the associated narratives.

6.1.5 Retrospection

Retrospection as a feature of sense-making refers to reflections on actions that have occurred in order to interpret the ongoing changes. Stakeholders would judge the process based on past software and system implementation efforts in the organization. The ERP implementation can be an iterative process. Therefore, as the implementation process and plan evolves, reflections occur, feedback is provided and adjustments are made to the to the implementation plan according (Saghafian et al., 2020; Yu Stepanov, 2021).

6.1.6 Plausibility

Plausibility involves the “selection of salient features” of the change to create a credible story that is widely accepted (Palmer et al., 2021; Holmlund T. D., 2016). The company should make the employees aware of important attributes of the ERP system that would give the company a competitive advantage and help the company remain a going concern. Some of these attributes are data accuracy, real-time access to information, ability to work remotely, improved data analytics for better and faster decision-making, etc. Additionally, the narrative should empower employees for the change and the achievement of organizational goals (Grdošić et al., 2017; Miller, 2020), while allaying associated fears.

6.1.7 Enactment

Enactment involves action-taking based on the sense-making that has occurred. According to Weick (1988), enactment involves the process of enactment (action-taking) which leads to the production of an enacted environment. Action taking is not arbitrary, but rather deliberate (Weick, 1988). Palmer et al., (2021), who stated that enactment involves connecting sense-making to actions, also support the idea that enactment is about taking action, The organization would proceed to take necessary actions, which include selecting a suitable ERP software, procuring the services of the ERP vendor, creating an ERP project implementation team, and implementing the new software, etc. (Kenge and Khan, 2020; Kiran and Reddy, 2019; Nagpal et al., 2015).

6.1.8 Projective Sense-making

Undertaking projective sense-making requires a very skilled, influential change manager who communicates and compels sense-making in order to steer the interpretation of people (Palmer et al., 2021). The change manager should communicate information about the changes in a way that positively shapes the perception of the affected stakeholders. According to Kiran and Reddy (2019), proper communication with employees, along with other factors such as employee education and involvement, helps employees better understand the need for the ERP system implementation. The result of this is less resistance towards the ERP project as a result of a better appreciation of the ERP system (Kiran and Reddy, 2019).

Figure 1 below provides a mind map /pictorial representation of the features of the sense-making framework by Weick (2000) as applied to the change regarding ERP implementation.

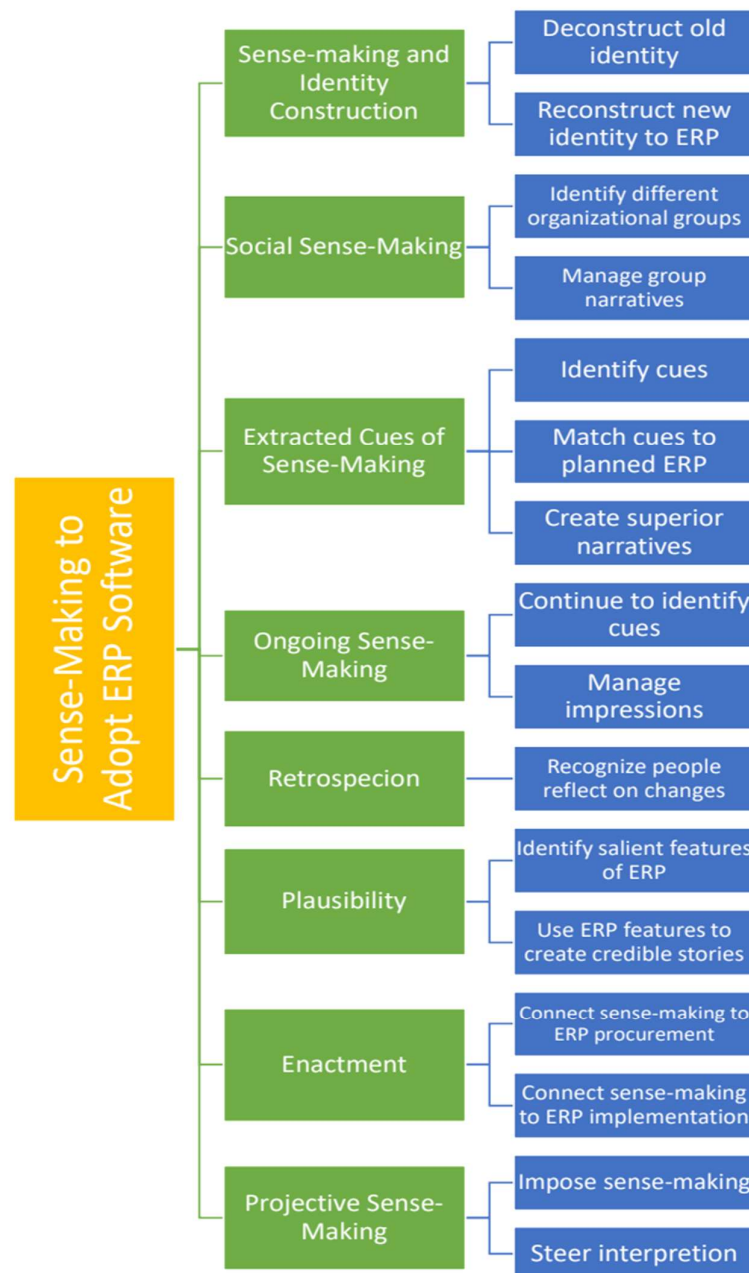


Figure 1: Sense-Making Framework by Weick (2000) Applied to ERP Software Implementation

6.2 The Implication of Sense-Making

There are implications of adopting sense-making to affect an organizational change, as in the case of the implementation of an ERP software. Some of these implications are provided below:

6.2.1 Mindset and Behavioral Influence

Sense-making helps organizations create meaning from change and empowers stakeholders to embrace it. When employees understand the rationale behind change, they are more likely to align with the organization's goals (Biggs et al., 2014; Barrick et al., 2015; Albrecht et al., 2018). Albrecht et al. (2020) described that an enhanced receptivity to change in sense-making can promote stakeholder's acceptance of the change implemented and can facilitate adaptation to organizational transformation. Moreover, enhancing involvement and shared understanding can diminish resistance and reluctance to change (Biggs et al., 2014), thereby fostering receptivity to new ideas and contributions towards transformation. Essentially, sense-making provides an avenue for influencing the mindset and behaviours of the stakeholders involved towards being more receptive to the change (Basford & Schaninger, 2016, as cited by Palmer et al., 2021; Palmer et al., 2021).

6.2.2 Change Manager's Role as Interpreter

Change managers serve as essential interpreters during the sense-making process. They simplify complex information, offering stakeholders meaningful insights (Elsan, 2019). By providing clear narratives and addressing concerns, they bridge the gap between leadership's vision and employees' understanding. This clarity fosters trust and commitment. While the change manager's responsibilities extend beyond interpretation, they also act as nurturers and caretakers (Palmer et al., 2021), providing emotional support and ensuring employee well-being throughout the change process (Elsan, 2019; Rousseau & Ten 2022). This includes fostering a positive environment and addressing concerns while providing resources and guidance.

6.2.3 Overall Organizational Resilience

As sense-making fosters organizational resilience by the nurturing of a learning culture, it aids the adaptation of constant changes in a dynamic business environment (Duchek et al., 2020). A workforce that prioritizes sense-making is better prepared to navigate uncertainties and seize opportunities, enhancing the organization's overall adaptability (Kuntz et al., 2016). Ultimately, the adoption of sense-making in organizational change can significantly impact mindset transformation (Murphy & Reeves 2019), stakeholder receptivity, and the roles of change managers. By fostering understanding, it also nurtures a positive and adaptive culture, which is essential for long-term success in a dynamic business environment.

7. Considerations for Future Research

Future research can be conducted as a case study analysis of the impact of utilizing sense-making to facilitate the adoption of ERPs in organizations. This would provide a real-life example of sense-making in action and would lend more credence to the use of sense-making in ERP implementation. Emphasis may also be placed on the study of how sense-making influences the implementation of the more recent SaaS (software as a service) ERP system. Alternatively, studies can examine the nuances involved when sense-making is utilized in the process of migration from a traditional ERP to a SaaS ERP.

8. Conclusion

Making changes in an organization - such as the implementation of new software - can be quite formidable. Sense-making provides a conceptual framework by which members of the organization, with the help of the change manager as an interpreter, can make sense of, understand, and create a contextual and compelling narrative for the change. Therefore, the importance of sense-making in enabling effective organizational change management and facilitating the implementation of an ERP cannot be overemphasized.

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